# FAA | AVIATION NEWS

MARCH 1965

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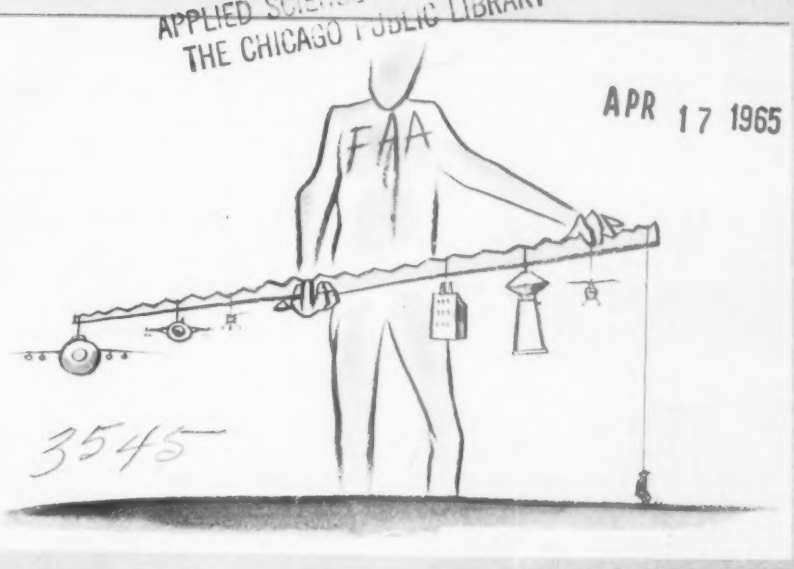


BALANCING THE PUBLIC INTEREST...

# FAA | AVIATION NEWS

F E D E R A L  A V I A T I O N  A G E N C Y

VOL. 3, NO. 11 MARCH 1965


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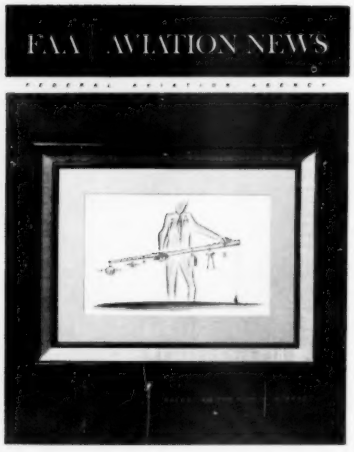


One FAA responsibility, to balance the varied interests in airspace, is portrayed by Robert Osborn here and on pages 8-9.


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# TEST PLAN TO SUBSTITUTE GROUND TRAINERS FOR STUDENT FLIGHT HOURS

The FAA is undertaking a nine-month test program in which ground trainers will be used in a flight training program to see if it is possible to reduce the number of flight hours needed for a pilot certificate.

To get the program started, the FAA is leasing four trainers from four different companies. Two will go to two different universities; the others to commercial flying schools. Negotiations are now under way with various universities and flying schools.

The trainers do not simulate any specific type of aircraft, but correspond to a typical single-engine general aviation aircraft.

In two of the models the instructor will be able to accompany the student in the trainer; in the other two the instructor remains outside.

Each school in the program will train a control group of 15 students to the required flight level for a private pilot certificate using the trainer to augment the normal school program. The study involves the number of hours of trainer time that may be substituted for aircraft dual flight instruction to meet standard pilot qualifications.

Proficiency results of the control group will be compared with the results of 15 students previously trained, or to be trained concurrently, who did not use a ground trainer during instruction.

During the same time period, the schools will also train 10 certificated pilots, who have had no more than 12 hours of instrument training, for an instrument rating. This will be done by combining the trainer with actual flight instruction to determine trainer benefits in achieving the required flight performance standards in the minimum number of flight hours.

As of now, no specific standards have been established for approval and acceptance of ground trainers, acceptable toward pilot certificate requirements, which can be used by FAA flight inspectors, prospective purchasers of trainers or trainer designers.

Primary objectives of the study will be to provide:

- Recommendations to the FAA for a set of acceptable standards for a ground trainer in a flight training program.
- Criteria for the use of trainers, including an acceptable ratio of trainer time to flight instruction time.
- Possible recommendations for revising regulations concerning the minimum flight hours required for obtaining pilot certificates.

Each of the universities and commercial flying schools selected will have to hold an FAA pilot school certificate with Primary Flying School, Instrument Flying School and Basic Ground School ratings.

A cross-section of students will be chosen on the basis of aptitude tests supplied by the FAA. They will be assigned to three classes of five students each. While the tests will be furnished by the Government, the school will be responsible for supplying qualified personnel to administer the tests, selecting equally talented classes, assisting in interpreting the results of the study and drafting a report.

Each member of the three experimental classes will be trained to the flight performance level required for a private pilot certificate under as nearly uniform conditions as possible. The school will use the normal syllabus sequence while taking into account the chief experimental variable—number of hours of ground trainer instruction.

Students will progress at their individual pace rather than being handled as a class group. While some flying schools delay proficiency tests until later in the over-all training sequence, the experimental program calls for each student to be moved as rapidly as instructors believe feasible. This will be done to focus attention on the effectiveness of the ground trainer.

The three classes of students, to whom all ground pilot trainer and flight instruction will be given leading to a private pilot certificate, will differ as follows:

- Group 1 will receive one hour of ground trainer instruction before the first hour of flight instruction. Thereafter, Group 1 students will alternate one hour in the ground trainer and one hour of flight instruction up to the stage of training when it is determined that the ground pilot trainer no longer contributes to the pilot's proficiency.
- Group 2 will receive not more than five hours instruction before the first flight instruction. Then the students will alternate hour for hour.
- Group 3 will receive not more than 10 hours before the initial dual flight. Then, the same system of alternating equal trainer and flight time will follow.

The training is scheduled to conform approximately to the college quarterly or semester system, or in the case of a commercial school to a four-month course. It will be up to each school to adjust its starting dates and speed of instruction to provide generally equivalent pacing throughout the program.

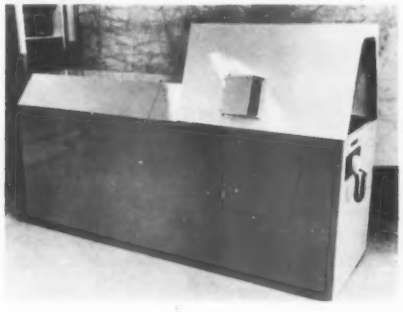
The school will be responsible for providing an appropriate installation site, a routine daily maintenance and for the operation of the ground pilot trainer during the contract period.

The trainer will be flight-checked at the site by the Government to insure satisfactory operation.

As an incentive, the Government will share 25 per cent of the tuition fee for flight training of each of the 15 students and 10 pilots participating in the training program.

Ground trainers will be leased from General Precision, Inc., Binghamton, N.Y.; Transdyne Corporation, Albertson, L.I., N. Y.; Frasca, Inc., Champaign, Ill., and Linn Electronics, Bethany, Okla.

**These ground trainers, simulating single-engine general aviation aircraft, represent the type that will be used in a nine-month test at four schools.**



# SST TECHNICAL PROBLEMS CAN BE SOLVED: HALABY

The FAA's second-round evaluation of the design proposals for the supersonic transport strongly indicates that there are no significant technical problems "that cannot be overcome in an orderly development program, either in airframe or engine development."

FAA Administrator N. E. Halaby made this optimistic announcement to the House of Representatives Committee on Science and Astronautics and its advisory Panel of Science and Technology, which is made up of outstanding scientists and engineers.

He said that the evaluation which began last November has "demonstrated clearly the feasibility of building a supersonic transport that can carry a payload in excess of 40,000 pounds for 4,000 statute miles, and do so at a seat-mile cost that at transcontinental and greater ranges is something less than current seat-mile costs of the best of today's long-range subsonic jetliners. . . .

"There is no doubt," the Administrator continued, that these developments represent "real progress."

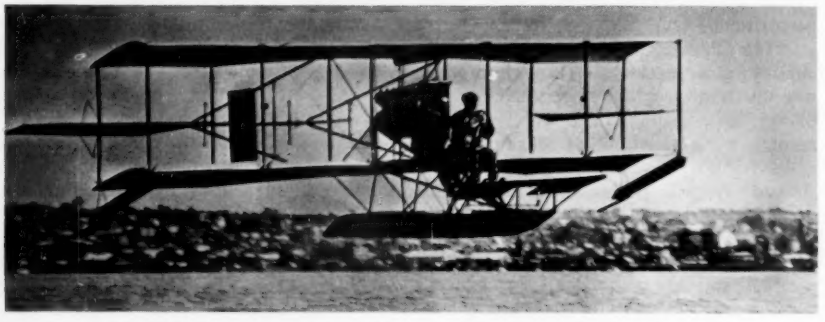
"At the same time, it must also be clear that demonstration of the feasibility of building an advanced airplane is still a long way from rolling a piece of new equipment down the runway."

A week before Mr. Halaby made his presentation, reservations for delivery positions for the U.S. SST reached 96 when Alitalia, which in November 1963 was the first foreign flag carrier to submit a reservation, increased its total from three to six.

Advance royalty payments totaling $9.6 million have now been submitted by the 14 foreign flag and seven U.S. flag airlines, plus one aircraft leasing company, that hold the 96 positions.

Last month, United States, British and French officials held a five-day session in Washington, D. C., to discuss airworthiness objectives in connection with future certification programs for commercial supersonic transports. The agenda included atmospheric problems, structures and sonic boom as related to the SST. It was the second meeting of the French-Anglo-United States Supersonic Transport group; the first was held in Paris in June 1964.

# MILESTONES IN AVIATION



Very early in his pioneer work in aviation, Glenn H. Curtiss was interested in flying from the water. In 1908, he attached twin canoe-like floats to his *June Bug*. The take-off attempts were unsuccessful.

In May 1910, he attached two metal cylindrical tanks under the lower wings of a land plane and became the first person to successfully land a plane on water.

The first take-off from water was made by Henri Fabre near Martigues, France, March 28, 1910. His landings, however, were not successful.

In January 1911, Curtiss leased North Island in San Diego Bay. At his invitation, the Navy Department sent Lt. T. G. Ellyson to witness and report on Curtiss' experiments.

On January 26, 1911, Curtiss got his plane off the water to become the second person in the world to do so and the first in the United States. While at the test site, Lt. Ellyson was taught to fly by Curtiss. Ellyson later became the first United States naval aviator. (*U.S. Air Force photo.*)

# Controllers' Attention Drawn To Pigeon-Tracking Professor

**A homing pigeon with a small radio beacon strapped to its back can be tracked for 10 miles. The miniature transmitter, built in Harvard laboratories, does not seem to inconvenience the pigeon. Hearing aid batteries are used for power.**

For the past year, Charles Walcott, assistant professor of applied biology at Harvard University, has been working on a project to find out how homing pigeons manage to return to their roosts after being released far from home. The birds fly at tree-top level at 30 to 40 miles an hour. With a tail wind, an average homing speed of 60 miles an hour is not unusual.

The professor abandoned the idea of trying to follow a whole flock of pigeons and decided to concentrate on the flight behavior of a single bird.

Air traffic controllers in a 100-mile radius of Boston were soon to become very familiar with the scientific antics of Professor Walcott and his crew in their Cessna 180 as they sought to follow the "homer" they had equipped with a tiny, single transistor, crystal-controlled oscillator with a power output of a few millionths of a watt. Together with batteries, antenna and harness, the mechanism weighs less than an ounce. With a very sensitive receiver, the bird could be tracked as far as 10 miles.

It was soon learned that pigeons do not always make a beeline for home. It seems that they often tend to dally, sometimes for a day or more, before winging back to their regular roost. This forced the Harvard crew to dally too, to the concern of the FAAers who monitor the air traffic in and around Boston. After the professor explained his apparently aimless meandering along the busy airways, he received full cooperation from the FAA controllers who took a personal interest in the project.

The project is being carried out under a contract with Naval Research.

# AVIATION ACTIVITY REACHED NEW HIGH IN 1963

Aviation activity measured by numbers of airplanes, pilots, air traffic and aeronautical exports soared to all-time highs in 1963, according to the 1964 edition of the "FAA Statistical Handbook of Civil Aviation" recently released by the FAA.

As of Jan. 1, 1964, a total of 87,267 active civil aircraft were registered with the FAA. This number includes 85,088 general aviation (non-airline) civil aircraft and 2,179 airline aircraft. In 1962 the total was 86,287 active aircraft—84,121 general aviation and 2,166 airline.

At the close of 1963, 378,700 active pilots were on record with the FAA, a substantial increase over the 365,971 in 1962. The 1963 total included 105,298 student pilots; 152,209 private pilots; 96,341 commercial pilots; and 20,269 pilots with airline transport ratings. Pilots aged 40 to 44 held the most pilot licenses, followed by those in age groups 35-39; 30-34; 25-29; and 45-49. Pilot licenses held by women jumped from 12,960 in 1962 to 14,259 in 1963. A total of 69,130 student pilot certificates were issued during the year, compared with 60,627 issued in 1962.

FAA air route traffic control centers handled 10,602,032 aircraft in 1963, a five per cent increase over the previous year. Airport traffic control towers handled 31 million takeoffs and landings in 1963, an increase of 10 per cent over 1962. Major gains resulted from general aviation flying activity which increased by 15 per cent over the previous year and accounted for nearly two of every three flights reported by FAA airport traffic control towers. Increased activity in business flying, air taxi and charter operations and other commercial flying provided the main impetus for general aviation growth.

General aviation aircraft flew an estimated 2.05 billion miles in 1963, compared to the previous year's 1.96 billion. Revenue miles flown by U. S. scheduled airlines in 1963 totaled 1.10 billion compared to one billion in 1962. Revenue passenger-miles flown by the scheduled airlines in 1963 totaled 50.36 billion, compared with 43.76 billion in 1962.

Rotorcraft output rose 35 per cent to 413 units in 1963, including 59 turbine-powered, transport-type helicopters.

The handbook's statistics are divided into chapters on the FAA, Airports, Airways, Aircraft and Airmen, General Aviation, Aeronautical Production, U. S. Civil Air Carrier Fleet, U. S. Civil Air Carrier Operating Data, and Aircraft Accidents.

The "FAA Statistical Handbook of Civil Aviation" may be purchased from the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C., 20402, for $1.00.

## Halaby Test-Flies StarLifter

*Following a policy which he has set for himself, FAA Administrator N. E. Halaby test-flew the C-141* StarLifter *before presenting its type transport certificate to C. S. Wagner, vice-president of Lockheed-Georgia Company, at Dulles International Airport, Washington. The* StarLifter *is the first aircraft ever developed from inception to serve as an Air Force airlifter and commercial airfreighter. Mr. Halaby, in authorizing the plane to haul commercial freight, said it is "the most modern air cargo aircraft in the United States and, we believe, in the world."*

## Aviation Mechanic Awards Made During Ceremony in Washington

Mechanic award winners Harry A. Palmer, *left*, general aviation, and J. Robert Schneider, air carrier, display plaques presented by Administrator Halaby.

Some 200 guests, aviation officials and FAA representatives recently gathered in Washington to see N. E. Halaby present plaques to the winners of FAA's second annual Aviation Mechanic Safety Awards Program. The plaques were donated by American Aviation Publications.

Winners were Harry A. Palmer, Midland, Tex., and J. Robert Schneider of Tulsa, Okla. (*FAA Aviation News*, December 1964.)

Following the ceremony, the winners and their wives were guests at a luncheon at Washington's Aero Club. They also were invited to Capitol Hill where they visited with Senators and Congressmen.

## NEW PUBLICATIONS AVAILABLE

FAA's *19th Annual Report of Operations Under the Federal Airport Act* describes Agency operations under the Federal Airport Act for Fiscal Year 1964. The report discusses both work completed and work in progress on developing standards for the design, construction, maintenance and operational safety of airports. This free publication is available from the FAA Distribution Section, HQ-438, Washington, D. C. 20553.

When requesting publications from the FAA, please print your name and address on a 3" x 5" piece of paper which will be used as a mailing label.

Publications available from the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402, include:

- *Supplement #2 to Standard Specifications for Construction of Airports;* 35 cents.
- *Private Pilot's Handbook of Aeronautical Knowledge*, 1963; $2.50.

# ALLOCATIONS UNDER FAAP TO BE MADE IN JUNE

The FAA is accepting requests for assistance under the Federal Aid Airport Program for Fiscal Year 1966. Requests received by April 2, 1965, will be considered for allocations of Federal funds to be made about June 30, 1965.

Congress has appropriated $75 million for the program with funds becoming available on July 1, 1965.

All public agencies which intend to improve or develop new airports in keeping with the recommendations of FAA's National Airport Plan are eligible to submit applications. Public agencies seeking funds are urged to apply to FAA District Offices having jurisdiction over their state for assistance in preparing the requests.

Requests for aid submitted after April 2 will be considered on the basis of funds available at the time of submission.

The Federal Aid Airport Program is designed to develop an adequate national system of airports. Under the program, the FAA provides matching funds, generally 50 per cent of eligible project costs, for the development and improvement of projects related to safety at publicly-owned airports. Terminal buildings and hangars are not eligible.

# First Two Sonic Boom Report Volumes Available

The first two volumes of a five-part report on the sonic boom public-reaction study conducted by FAA in 1964 were made available last month.

One—"Sonic-Boom Exposures During FAA Community-Response Studies Over a 6-Month Period in the Oklahoma City Area"—was prepared by the National Aeronautics and Space Administration, Langley Research Center, Langley, Va. It summarizes sonic boom overpressure levels and other shock wave characteristics.

The other study, "Meteorological Aspects of the Sonic Boom," was prepared by The Boeing Company under an FAA contract. It covers the influence of atmospheric temperature, pressure and wind on boom levels.

Both reports are available from the Clearinghouse for Federal Scientific and Technical Information, 5285 Port Royal Road, Springfield, Va. The NASA study, designated NASA TN-D-2539, is priced at $2.00 a copy; the Boeing study, AD610463, is $4.00.

## Caribou Demonstrates Short Take-off

*With Dulles International Airport tower in the background, a short take-off and landing (STOL)* Caribou *is FAA-tested to demonstrate the ease of operating STOL-type planes from short take-off areas. Since January 1964, the FAA has been investigating the possibility of V/STOL planes to fill a vital need in the area of high-density, short-range, air transportation to operate from close-in airports.*

## PAGES OF TIME

*FAA Deputy Administrator Lt. Gen. Harold W. Grant and Mrs. Jaime D. Serra place a copy of* FAA Aviation News *in a time capsule buried in the new San Juan, Puerto Rico, International FSS and ARTCC. The capsule is scheduled for opening in the year 2000.*

# FY '64 Business Summary Shows Third Level Airlines Doing Well

Third level airlines are doing quite well according to a summary of business in fiscal year 1964 compiled by the National Association of Third Level Airlines.

The 14 third level airlines—scheduled air carriers operating with aircraft weighing 12,500 pounds or less—carried 171,528 passengers in FY '64. How much increase this represents over FY '63 cannot be accurately determined because of incomplete reporting. However, the eight airlines which reported passenger traffic for FY '63 and FY '64 showed a 60 per cent growth.

Tag Airlines, operating between Detroit and Cleveland, was by far the largest carrier, with 60,000 passengers. Next was Reading Airlines with 17,400 passengers carried over three routes—Reading, Pa.-Newark, N.J.; Reading-Philadelphia-Allentown, Pa.; Allentown-Newark.

The third level aircraft fleet consists of 10 single-engine and 39 twin-engine planes. The DeHaviland *Dove* and Beech 18 make up approximately half of the fleet. Other planes are the Aero *Commander*, Cessna 310, Lockheed 10A and 12A and various single engine aircraft.

According to the report there are 276 persons employed in third level airline operations, including 86 pilots, 92 mechanics and 98 administrative and miscellaneous personnel.

One of the light aircraft assigned to the Border Patrol skims over the United States side of the Rio Grande as part of an effort to detect illegal aliens.

# All's Not Quiet Along the Border

On a scope in a darkened FAA radar room FAA controllers watch a blip cross the Rio Grande River from Mexico and move slowly across the skies of a desolate part of the Southwest.

The route is reported to the Border Patrol which plots the flight on a large wall map at its sector headquarters in Yuma, Ariz.

Ignorant of this surveillance, the American pilot who picked up two illegal aliens at a remote Mexican airstrip was amazed when he found a Federal welcoming committee awaiting him when he touched down at a small airfield in the Southwest after a flight of more than 100 miles.

An arm of the U. S. Immigration and Naturalization Service, the Border Patrol has for years received close cooperation from the Federal Aviation Agency in its efforts to prevent the illegal immigration of aliens. More than 6,000 apprehensions are credited annually to Border Patrol pilots and in almost every instance there is some element of FAA assistance.

The U. S.-Mexico border meanders for more than 2,000 miles—most of it across a sandy desert and along the muddy reaches of the Rio Grande.

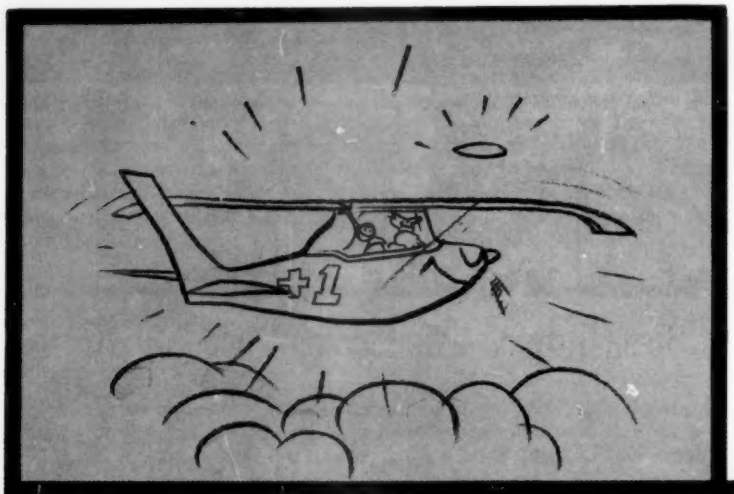
Relying on aircraft to maintain the security of the vast area, the Border Patrol has established 11 border sectors, and has its own complement of light aircraft and pilots. Seven days a week the flyers skim low over these boundary sectors to watch for telltale footprints that reveal another hopeful, but usually hopeless, northward trek by an illegal alien. The FAA has granted special waivers so the Border Patrol pilots can fly at an altitude of less than 200 feet for this purpose.

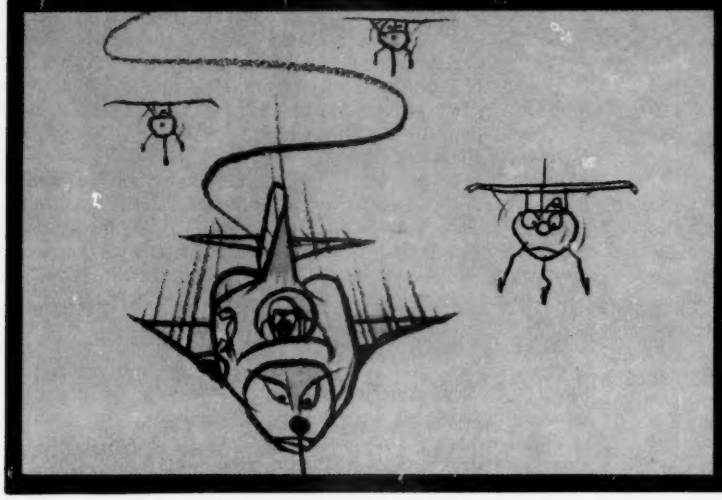
The cooperation between the FAA and the Border Patrol works both ways in that the Patrol regularly furnishes the FAA with detailed summaries of air smuggling suspects. This information has proven useful to the FAA which is vitally concerned about incidents in which U. S. pilots or aircraft are involved in illegal activities.

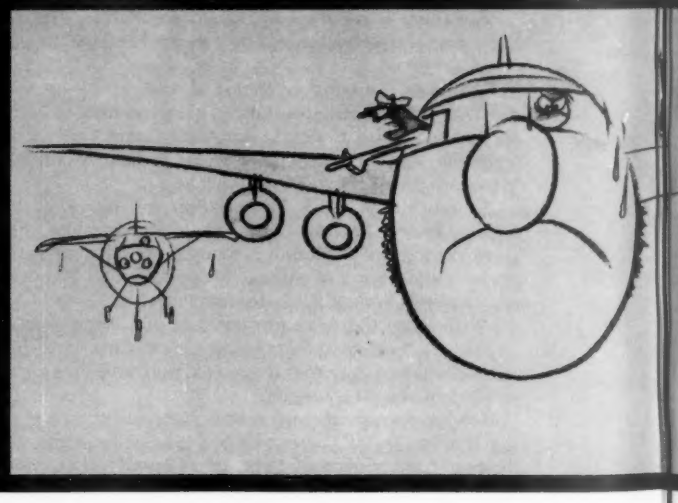
In addition to providing radar and communications support to the Patrol, the FAA also furnishes information about the pilots themselves and the planes they fly. Patrol officials point out that FAA records, furnished promptly and with the necessary detail, often help the Patrol apprehend lawbreakers and balk attempts to penetrate the U. S. border with illegal aliens, contraband and narcotics.

As an additional service, the FAA provides the Patrol with information on all crashes of U. S. registered aircraft in Mexico, Central America and South America. In many instances, these planes were suspected of having been involved in illegal activities and official notice of their destruction enables the Patrol to close its file on these aircraft.

# It Dep





Reading counterclockwise from the left: • That glorious feeling when you take your piece of sky and get away from it all. • The dedicated military pilot with the nation's defense on his mind who is in a hurry to fulfill his mission. • The air carrier pilot who looks at the small plane as though it shouldn't be using up "his" place in the sky. • The airport operator who balances everything on the dollar standard. • And that earthbound creature who represents 85 per cent of the population.

# epends Upon Your Point of View . . .

Ask any pilot who's the most important man in the air and his answer will be prompt and direct: "I am!"

But how does this all-important Number One look to other flyers?

This was the theme of a recent speech by FAA Administrator Halaby on the difficulties of administering the airspace in which disparate groups are vying for preferential treatment, viewing one another with disdain. The Administrator noted that airmen are especially "free, competitive and intensely individualistic. Thereby," continued Mr. Halaby, "hangs our problem." How is FAA to balance the interests of these competing individuals and find for the common good? Famed aviation cartoonist Robert Osborn visualized the dilemma with these accompanying cartoons.

Mr. Halaby in his talk focused on an average general aviation pilot. "If you're in the airplane after working like the devil for six months—going off on a vacation with your wife and one kid—it's the last delightful place in the whole world. You're there, you're getting your share of the air, you're on the way to enjoy the results of your work."

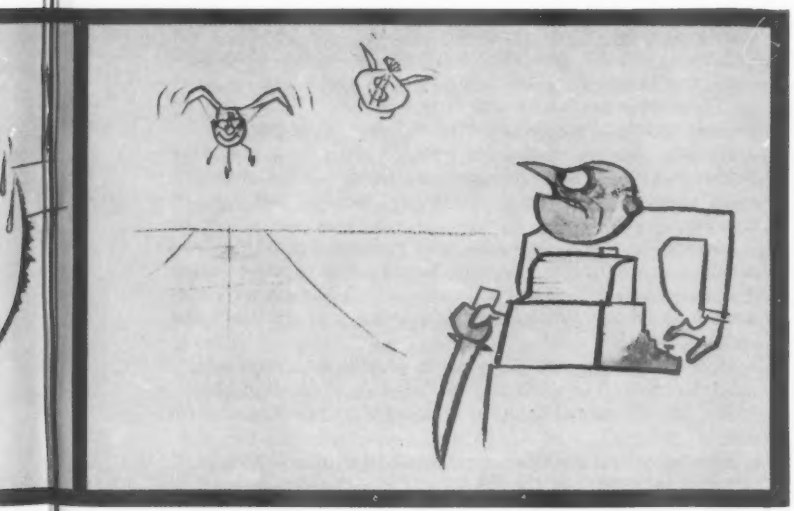
But an unsympathetic air carrier pilot may have only two words for the general aviation pilot: "Get lost!"

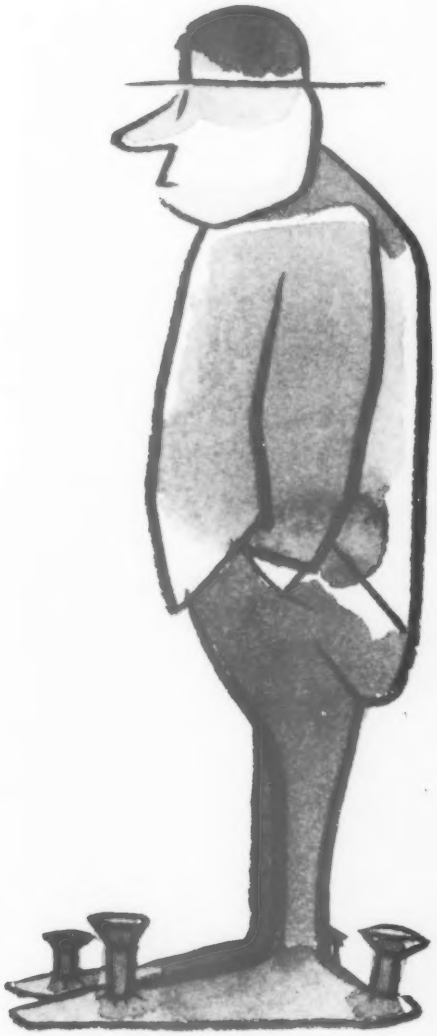
And again, to the military pilot as he zig-zags through on an oil burner run, private planes can act as gates on a medium-altitude slalom course.

Nor is the airport operator always overly sympathetic. The Piper or Cessna, he remembers, pays only a small landing fee —while the big multi-engine job behind him really puts the big bills in the till.

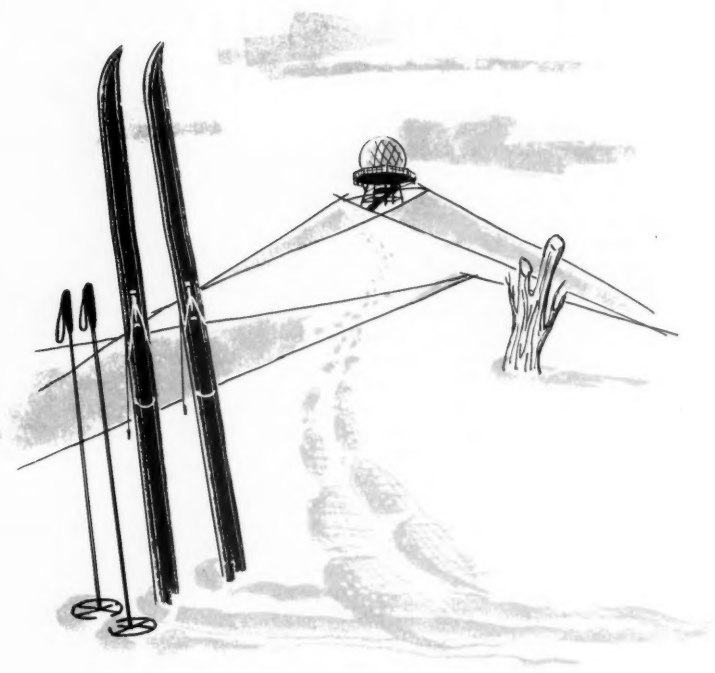
"Another thing that is usually forgotten," Mr. Halaby continued, "is that we owe a duty to those on the ground. These landlocked people make up 85 per cent of the American people—85 per cent who've never set foot in an airplane and may not set foot in an airplane in our lifetime.

"Each of us has his own personal bias," the Administrator summarized. "What we in FAA try to do is come out with a bias in favor of the public interest. And that's the problem," he concluded. "What is the public interest?"





# The Rambler ...Drops an Exposé



*Snowshoes and skis in the budget for the Government agency that regulates the airspace? Now, there's something for a crusading columnist to dig into. John McKelway, a columnist for the* Washington Evening Star, *did. The result of his investigation in his column, "The Rambler," is reprinted below:*

The Rambler has a strange habit of thumbing through federal budgets and the other day, after the last one had been released, he stopped at the section devoted to the Federal Aviation Agency.

On the surface . . . it appeared there was a good chance the FAA was trying to slip through Congress the purchase of some snowshoes and skis—winter fun, possibly, for high FAA officials . . . .

The FAA, it develops has been buying a few skis and snowshoes annually for the last 17 years and for a very good reason.

The Agency operates about 10,000 air navigational aids throughout the United States, Alaska and Hawaii.

About 8,000 technicians have the responsibility of keeping the signals operating, or on the air, for thousands of pilots in the air, 24 hours a day.

They are apparently a dedicated bunch. This is the toughest season for them.

As the vast snowstorms sweep across the United States the installations are sometimes damaged and the FAA's men of the Systems Maintenance Service have to fix them.

There are also the routine checks to be made, despite the weather.

The stations are sometimes perched on peaks of 10,000 feet or more in the Rockies, or are located in the trackless stretches of Alaska.

Some stations are manned, like radar stations; others are isolated and send out their beams automatically.

Under normal conditions, the men can make it to these stations with four-wheel drive vehicles, or helicopters or "Snocats," a sort of tractor with a cabin between the tracks.

But in blizzards, or when the snows have drifted, they get out the snowshoes, or skis.

One of these men is now in Washington, serving as the deputy director of the operation. He is Glen Goudie. Mr. Goudie reports he has, when stationed in Alaska, even used dog teams to check out or repair an installation.

"Those dogs are tricky and dirty," he said. "They run up the side of a hill and tip you over and then leave you."

He was once marooned for about a week at a post near Nome, Alaska. Finally, in desperation, he broke out with snow shoes and struggled 13 miles. He had run out of cigarettes.

Just last Jan. 29, a detachment of maintenance men helped rescue a forest ranger who was buried alive in snow in the mountains of Utah. The outfit is also called in on any accidents in the mountains, aiding in the location of the crash and rescue work.

How these men can fix a piece of electronic equipment, much less find it, in a blizzard is a mystery to the Rambler.

But he will probably think of them next time he shovels snow.

And he has no objection to the purchase of a few pairs of skis and snowshoes by the FAA.

For many Oregon youngsters, their first helicopter ride was one that saved their lives and those of their family.

# SARDA Saves Lives in Oregon

The proverbial silver lining that showed through during the West Coast disaster this winter was the success of SARDA —the State and Regional Defense Airlift Plan.

SARDA was developed by the Federal Aviation Agency in 1964 as a part of the White House Office of Emergency Planning to husband the nation's resources and preserve civil government during a period of disaster.

When the devastating flood waters swept through large areas of Oregon, the plan which had been developed earlier by the state, with the assistance of the FAA, was immediately implemented. The Governor's emergency command post was set up in the State Capitol in Salem.

Under the plan, civilian and military aircraft were used for many purposes, but primarily to rescue hundreds of people stranded on rooftops, in stalled trains and in other isolated locations.

While military aircraft played a significant role under the plan, saving hundreds of lives, general aviation aircraft also made a major contribution. Some 67 airplanes flew 316 hours to rescue stranded persons, evacuate the sick and injured, bring in food and medicine, and survey the damage.

Twenty-two general aviation helicopters flying 610 hours were credited with saving 18 lives.

All types of emergency landing strips had to be used—beaches, roads, fields and gravel bars.

The devastated sections were declared disaster areas and with FAA cooperation only rescue aircraft were allowed to fly below 2,000 feet.

Director R. W. Dunn of Oregon's Board of Aeronautics pointed out that there would have been considerably more suffering and loss of life and property without the effective use of small aircraft.

# RULES OF THE ROAD

# VFR MEANS SEE AND BE

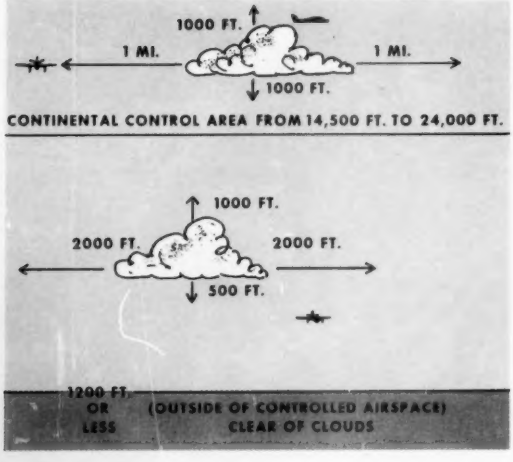
*This is the first in a series of articles on "rules of the road" —those regulations which govern the operation of aircraft in flight. The articles will highlight regulatory areas which have proved troublesome to pilots in the past and which have produced a substantial number of violations. Pilots who find themselves lacking knowledge in these areas are referred to the applicable parts of the* Federal Aviation Regulations *for further study.*

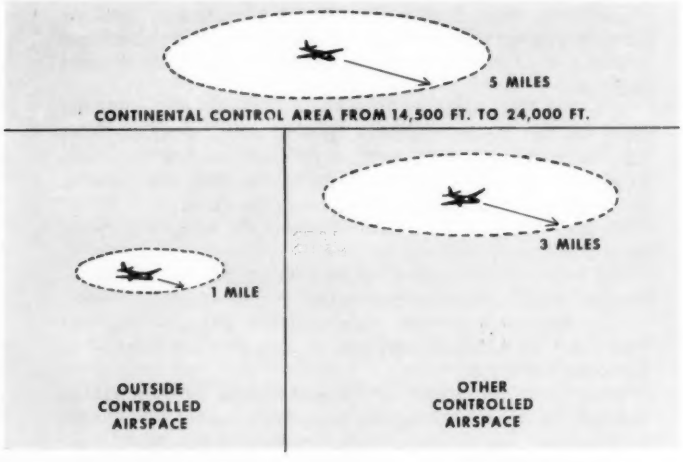
*VFR flying is featured this issue; IFR flying next month.*

VFR. The letters stand for Visual Flight Rules, and the emphasis here is on the word "visual."

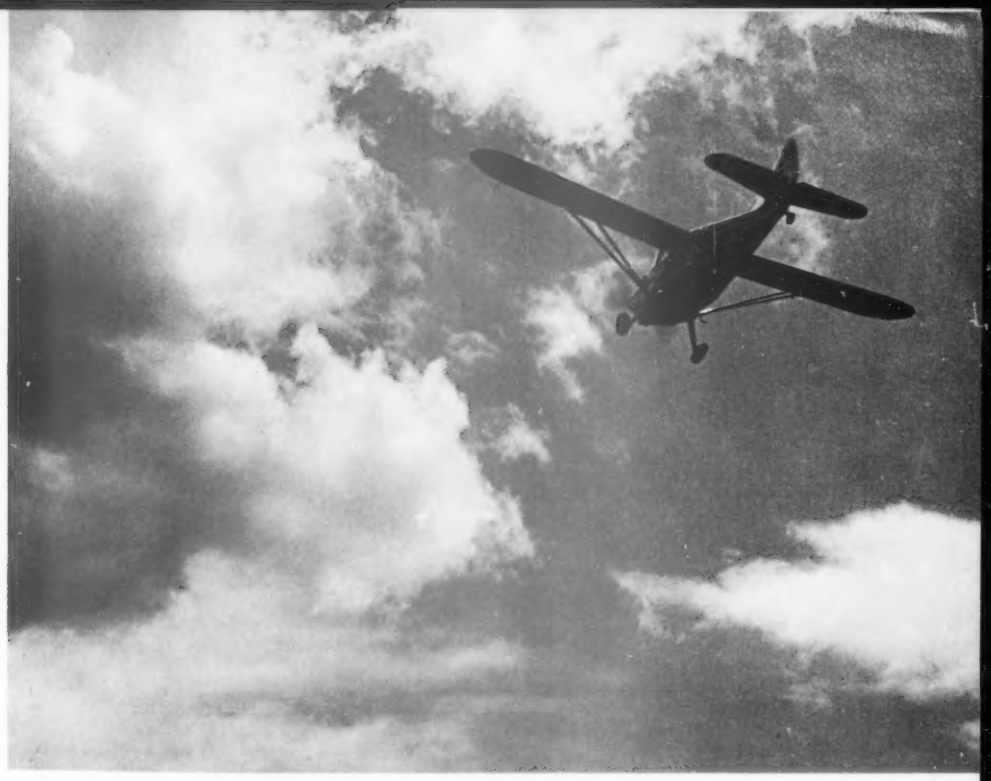
VFR flying is done on a "see-and-be-seen" basis. This means that VFR pilots must at all times be able to see well enough to avoid collision with other aircraft in flight as well as mountains, television towers, buildings and other objects on the ground.

Ceilings and visibilities, therefore, are extremely important to the VFR pilot. When they drop below the minimums pre-



# E SEEN



scribed in Part 91 of the *Federal Aviation Regulations,* IFR (Instrument Flight Rules) operations are required.

As an aid to remembering the VFR visibility and clearance-from-clouds minimums, the pilot should relate them to the type of airspace in which he will be flying:

In airspace under *Area Positive Control,* no VFR operations are permitted. Only properly-equipped aircraft operating in accordance with an approved IFR flight plan are permitted in APC airspace, which now includes virtually all U. S. domestic airspace above 24,000 feet Mean Sea Level (MSL). The exceptions are a few small areas along the Canadian and Mexican borders where radar coverage is not available at the present time.

In the *Continental Control Area,* which extends from 14,500 feet to 24,000 feet MSL over most of the country, VFR flying is prohibited when the visibility drop below five statute miles. Pilots wishing to operate VFR in this airspace also must be able to remain at least 1,000 feet vertically (over or under) and one mile horizontally from any cloud formation.

In *other controlled airspace,* the minimum visibility requirement for VFR flight is three statute miles. VFR pilots also must keep at least 2,000 feet horizontally from clouds as well as 1,000 feet vertically above and 500 feet vertically below.

Special VFR minimums apply in control zones if the pilot has an appropriate clearance from air traffic control. With this clearance, he may operate in a control zone when the visibility is down to one mile provided he remains clear of clouds.

In *uncontrolled airspace,* the VFR visibility requirement is one mile at all times. The clearance-from-clouds minimums are 2,000 feet horizontally and 1,000 and 500 feet vertically (over and under), when operating at more than 1,200 feet above the surface. Below that level, the regulations simply state that VFR pilots shall stay "clear of clouds."

While flying VFR at more than 3,000 feet above the surface, pilots also must comply with certain cruising altitude rules which provide a degree of separation between aircraft. These rules allow a choice of several altitudes depending on the magnetic course.

When the magnetic course is zero through 179 degrees, VFR operations may be conducted on any odd thousand foot MSL altitude *plus* 500 feet. For example: 3,500 feet, 5,500 feet, 7,500 feet and so on up to 27,500 feet or flight level 275.

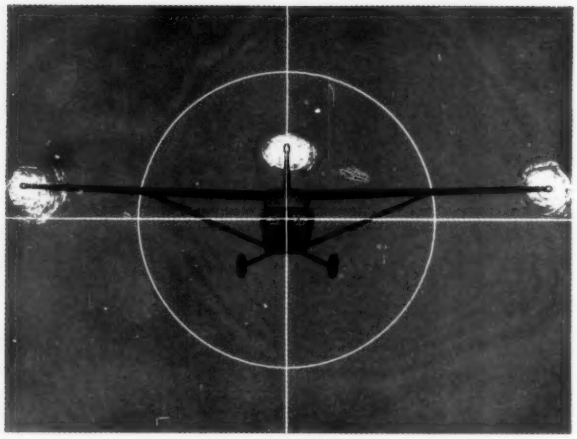
On a magnetic course of 180 through 359 degrees, VFR pilots may select any even thousand foot MSL altitude *plus* 500 feet. Examples are 4,500 feet, 6,500 feet, 8,500 feet on up to 28,500 feet or flight level 285.

Above flight level 290 (29,000 feet MSL), vertical separation between aircraft is doubled and only the even thousand foot MSL altitudes are used for VFR traffic. However, not much of this airspace is available for VFR operations since APC is in effect above flight level 240 over most of the country.

Flight plans are not *required* for VFR operations, except in certain instances such as transiting an Air Defense Identification Zone (ADIZ). FAA, however, strongly recommends their use.

A flight plan assures prompt search and rescue action in emergencies and also alerts FAA facilities to the flight, thus permitting them to give better service. Flight plans should be closed promptly after completion of the flight in order to avoid needless search and rescue efforts.

FAA also cautions pilots that the VFR weather minimums prescribed in FAR Part 91 are just that—minimums. A prudent pilot will avoid cutting corners and always give himself an added margin of safety. It's the best life assurance a VFR pilot can get.—J. L.



# SAFETY FIRST

## *Practice IFR Flying . . . the Right Way*

There is only one way to get an instrument rating—practice instrument flying and pass the examination. There are certain regulations which specify the correct manner in which this should be done.

There are, of course, wrong ways, too. There is the story of the young lady who was undergoing instruction. Her instructor told her that during this class she was to practice instrument flying and that he would meet her at the flight line to start the instruction. She listened as far as the word "flying," went out, cranked up the plane, took off solo, climbed to her desired altitude, put on the hood and for the next hour made turns and "practiced" instrument flying. She was lucky; she survived.

Federal Aviation Regulation Part 91.21(b), General Operating and Flight Rules, is concerned with flight instruction and simulated instrument flight. It states that no person may operate a civil aircraft in simulated instrument flight unless:

(1) An appropriately-rated pilot occupies the other control seat as safety pilot.

(2) The safety pilot has adequate vision forward and to each side of the aircraft, or a competent observer in the aircraft adequately supplements the vision of the safety pilot.

(3) Except in the case of a lighter-than-air aircraft, the aircraft must be equipped with dual controls that function.

The Federal Aviation Agency's Advisory Circular 61-19 emphasizes that a hazardous lack of visibility may result from the use of any device which unduly restricts the visibility of the safety pilot during simulated instrument flight.

FAR Part 61, covering Certification of Pilots and Flight Instructors, requires that some effective means be provided to block out visual reference for the pilot taking an instrument flight test.

The use of slats, a hood, light polarizing material or any other effective means satisfactory to the examiner conducting the instrument flight test is acceptable. In recent years the use of the visor-type hood has been widespread because of its convenience and the fact that it does not unduly obstruct the visibility of the safety pilot.

In some cases, nontransparent materials have been placed over portions of windshields and windows to reduce the possibility of outside visual reference. However, in some instances these materials may restrict the safety pilot's view and thus introduce an unacceptable safety hazard.

The use of such materials may change the original aircraft type to the extent that it is no longer airworthy. In instances where an individual has modified the aircraft and is not sure of its airworthiness, he should contact the local FAA inspector who will offer assistance and the help of engineering personnel if necessary.

The Agency recommends that no material be placed in the windows of an aircraft which will in any way reduce the field of vision of the safety pilot.

In practicing simulated instrument flying, don't do it solo. You might not be as lucky as the young lady.

# Letters

FAA

*FAA Aviation News* welcomes comments from the aviation community. We will reserve this page for an exchange of views. No anonymous letters will be used, but initials will be withheld on request.

### • Plaudit

The FAA's decision to lower the positive control area floor from 24,000 to 18,000 feet speaks well for the future development of general aviation. This will contribute to the usefulness of general aviation aircraft and stimulate the development of equipment which will allow general aviation aircraft to be used at high altitudes.

It will contribute to the safety of flight through the avoidance of weather, terrain in certain mountainous areas, turbulence and other problems confronting the flyer at lower altitudes.

FAA should be commended for taking this forward step.

Initials withheld

### • Life Jackets

A few months ago my children and I flew through Central America carrying the prescribed life jackets for the coastal routes. As we flew inland and over the mountain terrain, the thought of a forced landing in such rugged terrain made me do some thinking.

I made the children put on their life jackets and keep them on whenever we were over dangerous mountains. My thought was that the jackets would help protect the vulnerable chest cavity in the event of a crash and improve the chance of survival.

Mrs. L. D. H.
Oklahoma City

*Although the FAA has no record of improved survivability through the use of life jackets in the type of land accident you describe, the Agency has recently made extensive studies using inflatable bags attached to seat structures. Impact forces on dummies were greatly reduced in these tests* (FAA Aviation News, *June 1964*).

*You may be assured that the FAA will give your idea full consideration in its future safety education planning.*

### • Private License

I have been flying alone for the past five years. I have my own plane and it is disgusting to have to be placed as a loner pilot. I have taken the written examination twice in the past three years and both times I failed the test. What area I was short in will never be known.

The last test I took was in the mountainous country of a Southwestern state, an area I am not familiar with and an area that I never expect to fly in. There are many problems of flight which one might encounter in this type of country that he would not encounter in an area like my own.

Initials withheld

*It is regretted that you experienced difficulty with the private pilot written examination. You may request an analysis of the results of your written examination by writing for it.*

*Send the type, place and date of the examination to the Airman Certification Branch; Chief, Written Examination Processing Section, AC-365; Federal Aviation Agency Aeronautical Center; P.O. Box 1082; Oklahoma City, Okla., 73101.*

*In regard to your comment regarding examinations relating to sections of the country with which you are not familiar, the questions which may vary are generally of a topographical nature. You may prepare for these particular questions by referring to the sectional chart provided for the area where you plan to take your private pilot examination.*

### • FAR Interpretations

With reference to *Federal Aviation Regulation 61.65*, may I please have an official definition or interpretation of "local area designated by his flight instructor." I would also like an official FAA definition of "cross-country."

Does FAR 61.85 (a) (3) mean a student pilot who has not complied with FAR 61.65 (a) (b) (c) may fly from airport to airport as long as he does not exceed 25 statute miles from home airport?

J. V. M.
Swan Lake, Mont.

*The "local area designated by his flight instructor" prescribed in FAR 61.65 is defined as a suitable area that is as nearly within the immediate vicinity of the airport of departure as local traffic conditions permit.*

*A cross-country flight is one which includes a landing at an airport other than the place of departure irrespective of distance. However, to be acceptable toward the cross-country experience requirements prescribed in FAR 61.85 for the issuance of a private pilot certificate, each flight must include "a landing at a place more than 25 miles from the place of departure." Therefore, the holder of a student pilot certificate whose certificate has not been endorsed by an authorized flight instructor for cross-country flight is not eligible to fly from airport to airport even though the distance may not exceed 25 statute miles.*

### • Aircraft Mechanic

When I was in the Air Force, I held the job of aircraft mechanic specialist #43151 (jet speciality). On my discharge paper, I noticed that in the space provided for "related civilian occupation and DOT number" it is filled in as "airplane mechanic 5-80.100." Could you please tell me what this number stands for and if it might possibly classify me for specialist work in FAA or industry.

P. J. H.
Stanhope, N. J.

*The airplane mechanic number 5-80.100 to which you refer is contained in the U. S. Employment Service Dictionary of Occupational Titles (DOT) and relates to your Air Force speciality number 43151 (jet speciality). The DOT numbers are used to categorize an applicant for registration and assist the ex-serviceman in finding comparable employment in civilian life.*

*It is possible that specialized work may be obtained in an aircraft factory or a certified repair station rated for jet aircraft, based upon your experience in that field. However, to progress to more responsible positions in the aircraft industry, it is advisable that mechanics secure an FAA Mechanic Certificate.*

*Copies of our Advisory Circular, AC 65-2, "Airframe and Powerplant Mechanics Examination Guide" are available from the Government Printing Office for 30 cents.*

### • Subscription Renewal

FAA AVIATION NEWS has stopped coming. I enjoy the publication and would like my subscription to continue. Do I owe you money for it or what? Please let me know.

W. J. R.
Eau Claire, Wis.

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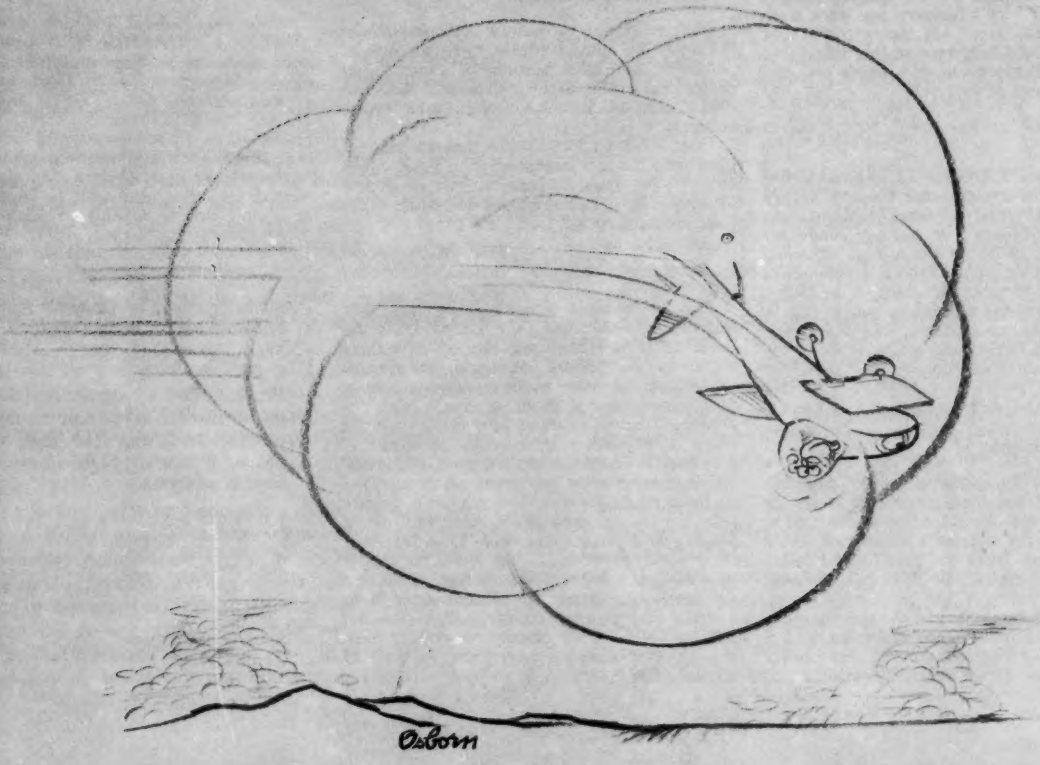


**Avoid the clouds and you'll go far.**